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1 Expert system on a chip: an engine for real-time approximate reasoning

M Togai, H Watanabe

December 1986 **Proceedings of the ACM SIGART international symposium on Methodologies for intelligent systems**

Full text available: pdf(678.50 KB) Additional Information: full citation, abstract, references, index terms

The role of inferencing with uncertainty is becoming more important in rule-based expert systems (ES), since knowledge given by a human expert is often uncertain or imprecise. We have succeeded in designing a VLSI chip which can perform an entire inference process based on fuzzy logic. The design of the VLSI fuzzy inference engine emphasizes simplicity, extensibility, and efficiency (operational speed and layout area). It is fabricated in 2.5 &mgr;m CMOS technology. The inference engine con ...

2 Toward expert systems on a chip

C G Looney, A R Alfize

October 1986 **ACM SIGART Bulletin**, Issue 98

Additional Information: full citation, index terms

3 CANDIDE: a learning system for process control

B. Burg, D. Luzeaux, B. Zavidovique

June 1989 **Proceedings of the second international conference on Industrial and engineering applications of artificial intelligence and expert systems - Volume 1**

Full text available: pdf(656.58 KB) Additional Information: full citation, abstract, references, citings, index terms

The aim of this paper is to present an application of artificial intelligence techniques to control. Their use at a high level, as supervisor tools is shortly described and we focuse the attention onto their use at low level, inside the control loops. We describe our approach using artificial intelligence machine learning to acquire knowledge concerning the controlled system, to modelise it and finally to control it. As an example, CANDIDE learns to drive a car. We explain all the learning ...

4 Multi-Input fuzzy inference engine on a systolic array

M. A. Manzoul, V. B. Rao

June 1988 **Proceedings of the first international conference on Industrial and engineering applications of artificial intelligence and expert systems -**

Volume 2

Full text available: pdf(371.48 KB) Additional Information: full citation, references, index terms

5 Systolic VLSI array for fuzzy logic in expart sytems

Mahmoud A. Manzoul, Hoverth A. Serrate

February 1988 **Proceedings of the 1988 ACM sixteenth annual conference on Computer science**

Full text available: pdf(323.44 KB) Additional Information: full citation, abstract, references, index terms

Due to VLSI technology, hardware implementation of algorithmic oriented array architectures, such as systolic arrays, have become feasible and desirable. This paper discusses how to design a systolic array for the computation of the overall fuzzy relation, based on Fuzzy Sets Theory, between the antecedent and the conclusion portions of the rules in the knowledge bases of expert systems. The overall fuzzy relation may be used instead of the explicit rules of the system, for fast fuzzy infer ...

6 Fuzzy logic, neural networks, and soft computing

Lotfi A. Zadeh

March 1994 **Communications of the ACM**, Volume 37 Issue 3

Full text available: pdf(2.17 MB) Additional Information: full citation, references, citings, index terms, review

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